

THAT WHICH IS CLAIMED:

1. A preform for use in forming a machined structural assembly of predetermined dimensions, comprising:

a first structural member defining at least one contact surface;

5 a second structural member defining at least one contact surface, said at least one contact surface of the second structural member being structured to correspond to said at least one contact surface of said first structural member; and

a friction weld joint joining said at least one contact surface of said first structural member and said at least one contact surface of said second structural member such that said first and second structural members form a preform having  
10 dimensions approximating the dimensions of the machined structural assembly to thereby reduce material waste and machining time when forming the machined structural assembly.

2. A preform according to Claim 1 wherein said first and second structural members comprise a material selected from the group consisting of  
15 aluminum, aluminum alloys, titanium, titanium alloys, nickel-based, steel, copper-based alloys, and beryllium-based alloys.

3. A preform according to Claim 1 wherein said first and second structural members comprise dissimilar materials.

4. A preform according to Claim 1 further comprising a third structural  
20 member friction welded to at least one of the first and second structural members.